

ABSTRACT:

Protection techniques within optical communication networks are extremely important. An alternative to a line protection scheme, as most current optical communication networks use, is to utilize a path protection technique in which working and protection paths that are desired are assigned during network setup. During normal operations, only the working path is configured within the network elements' switch fabric with protection paths being left unconfigured. If a failure indication is detected in the working path by a network element, a protection entry within a routing table of the network element is looked up to determine protection switching data that is required to switch the data traffic to the pre-assigned protection path. This protection switching data is inserted within the path overhead for the data traffic so that it can be communicated to all of the network elements that require their switch fabrics reconfigured to establish the protection path of communications. This protection technique allows for similar switching speed to that of line switching protection such as BLSR designs, but with an increase in efficiency in terms of protection bandwidth.

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